

REMARKS

This application has been reviewed in light of the Office Action dated June 23, 2006. Claims 1-4 and 55-59 are presented for examination, of which Claims 1 and 56 are in independent form. Claims 1-4 and 55-59 have been amended to define still more clearly what Applicants regard as their invention. Favorable reconsideration is requested.

Claims 1, 2, and 55-59 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

The claims have been carefully reviewed and amended as deemed necessary to ensure that they conform fully to the requirements of Section 112, second paragraph, with special attention to the points raised in paragraph 3 of the Office Action. Specifically, Claims 1 and 56 have been amended in part to clarify that a first image processing unit, e.g., 2151 in FIG. 10¹, generates first image data packets by converting image data inputted by an image input apparatus, a second image processing unit, e.g., 2152 in FIG. 10, generates second image data packets by processing the first image data packets, and a third image processing unit, e.g., 2149 in FIG. 10, generates and outputs image data based on the generated second image data packets. It is believed that the rejection under Section 112, second paragraph, has been obviated, and its withdrawal is therefore respectfully requested.

Claims 1, 2, 4, and 56-58 were rejected under 35 U.S.C. § 103(a) as being obvious from U.S. Patent No. 5,524,265 (*Balmer*) in view of U.S. Patent No. 5,515,537 (*Taveres*); and Claims 55 and 59 were rejected as being obvious from *Balmer* in view of

¹/ It is to be understood that the claim scope is not limited by the details of any examples or of any particular embodiments that may be referred to.

Taveres, and in further view of U.S. Patent No. 5,528,704 (*Parker*).

The present invention is intended to provide a digital multifunction apparatus including a data packet transfer unit for connecting plural image processing units in a manner in which the data processing speed is optimized.

Claim 1 is directed to an image input/output control apparatus for performing input/output of image data, the apparatus includes first, second, and third image processing units, a control unit, and a data transfer unit. The first image processing unit generates a plurality of first image data packets by converting image data inputted by an image input apparatus, the second image processing unit performs image processing on the plurality of first image data packets generated by the first image processing unit to generate a plurality of second image data packets, and the third image processing unit generates image data based on the plurality of second image data packets and outputs the generated image data to an image output apparatus.

According to Claim 1, the control unit is adapted to control storing-processing for storing the plurality of second image data packets to a storage apparatus and to control reading process for reading the plurality of second image data packets from the storage apparatus, and the data transfer unit is adapted to connect the plural image processing units and the control unit like a ring and to perform data transfer between the plural image processing units and the control unit unidirectionally.

Further, according to Claim 1, the data transfer unit transfers the plurality of first image data packets and the plurality of second image data packets to one of the plural image processing units based on an identification information for identifying one of said plural image processing units added to the second image data packets, and one of the plural image processing

units performs image processing on the first image data packets and the second image data packets which are transferred by the data transfer units based on the identification information.

Balmer, as understood by Applicants, relates to a multiprocessor integrated circuit (100 in FIG. 2), that includes plural graphic processors (71-74 in FIG. 2) which are each controlled individually by a master processor (60 in FIG. 2). In the *Balmer* system, the data to be processed by each graphic processor is transferred independently of the commands issued from the master processor to each graphic processor, in contradistinction to the apparatus of Claim 1, where a data transfer unit transfers image data packets to an image processing unit based on identification information for identifying the image processing unit, added to the data packets.

Tavares, as understood by Applicants, relates to a logical token ring system, and is cited in the Office Action for the feature of connecting processors like a ring. Applicants submit that nothing has been found in *Tavares* that would teach or suggest a data transfer unit transferring image data packets to an image processing unit based on identification information for identifying the image processing unit, added to the data packets.

Applicants submit that nothing in *Balmer* or *Tavares*, whether considered separately or in any permissible combination (if any), would teach or suggest a data transfer unit transferring image data packets to an image processing unit based on identification information for identifying the image processing unit, added to the data packets, as recited in Claim 1.

Accordingly, Claim 1 is seen to be clearly allowable over *Balmer* and *Tavares*, whether considered separately or in any permissible combination (if any).

Independent Claim 56 includes features substantially similar to those discussed above with regard to Claim 1. Accordingly, Claim 56 is believed to be patentable over *Balmer*

and *Tavares*, for reasons substantially the same as those discussed above in connection with Claim 1.

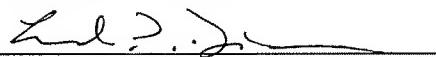
A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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